



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,659	01/08/2001	Jyoti Kiron Bhardwaj	WLJ.059	9141

7590 06/16/2004
Jones Valentine
Suite 150
12200 Sunrise Valley Drive
Reston, VA 20191

EXAMINER

ELVE, MARIA ALEXANDRA

ART UNIT PAPER NUMBER

1725

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/674,659

Applicant(s)

BHARDWAJ, JYOTI KIRON

Examiner

M. Alexandra Elve

Art Unit

1725

eh

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Claim Rejections - 35 USC § 112***

Claims 5 & 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 is dependent on governmental legislation, claims 7 & 8 are dependent on the specification and claim 9 is dependent on accompanying drawings. A legislative dependency renders the claim indefinite because legislative amendments are not uncommon and thus the claim would change over time. In addition the claims 7-9 dependencies render the claims indefinite because amendments to the specification or changes to the drawings may occur throughout the prosecution of the application and hence the claims will also change. Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 & 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hodgson et al. (US Pat. 5,688,384).

Hodgson et al. discloses a fluorine cell will generates fluorine on-demand and has a control sensor, which either starts or stops the supply. Outlet valves (54/58) are shown in figure 1 and 54 is the outlet for fluorine. (abstract, figures, col. 1, lines 1-67 & col. 2, lines 1-60)

Claims 1 & 3-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Subrahmanyam et al. (US Pat. 6,079,426).

Subrahmanyam et al. discloses converting nitrogen trifluoride into a plasma containing free fluorine radicals. This used to clean deposits. The plasma is formed in a remote plasma generator and flowed into the chamber through a gas distribution plate. (abstract, figures, col. 2, lines 50-67, col. 3, lines 1-12)

Claims 1-3 & 6 are rejected under 35 U.S.C. 102(b) as being anticipated by JP abstract (02230720).

JP (02230720) discloses the generation of a halogen gas in an accumulating chamber, which is connected to another chamber by means of a valve.

Claims 1, 3 & 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Saprokhin et al. (EP 150,285 A1).

Art Unit: 1725

Saprokhin et al. discloses a fluorine generation cell. Pipes 28 and 29 remove hydrogen and fluorine following the production. (abstract, figures, pp. 3, 6-8, 10)

Claims 1-3 & 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Wakefield et al. (WO 98/27005).

Wakefield et al. discloses a system for producing a fluorine gas. Following generation the gas is contained by means of a valve 104. (abstract, figures, p. 6)

Claims 1, 3 & 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Skone et al. (WO 99/07919).

Skone et al. discloses a system for producing a halogen gas, which is recycled through the system following use in processing. (abstract, figures, pp. 2-5)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson et al. in view of Subrahmanyam et al.

Hodgson et al. discloses a fluorine generating cell but does not teach production of plasma. Subrahmanyam et al. teaches converting the halogen gas(es) into a plasma in order to process a substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to convert the fluorine into a plasma, as taught by Subrahmanyam et al. in the Hodgson et al. system because most fluorine processing is used in electronics manufacturing and hence the production is plasma is required.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Subrahmanyam et al. in view of Hodgson et al. or JP abstract (02230720).

Subrahmanyam et al. discloses a fluorine plasma generating system but does not teach the use of valves in the system.

Hodgson et al. discloses a fluorine generating cell, which has outlet valves and 54, is the outlet for fluorine. It would have been obvious to one of ordinary skill in the art at the time of the invention to have valves in the system, as taught by Hodgson et al. in the Subrahmanyam et al. system because the gas must be contained prior to entering the desired system and this necessitates the use of a valve.

JP (02230720) discloses generation of a halogen gas to be used in an accompanying system. Valves are used to separate the two systems. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a valve, as taught by JP in the Subrahmanyam et al. system because the gas must be contained prior to entering the desired system and this necessitates the use of a valve.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP abstract (02230720) in view of Subrahmanyam et al.

JP (02230720) discloses the generation of a halogen gas in an accumulating chamber, which is connected to another chamber by means of a valve, but does not teach production of plasma. Subrahmanyam et al. teaches converting the halogen gas(es) into a plasma in order to process a substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to convert the fluorine into a plasma, as taught by Subrahmanyam et al. in the JP (02230720) system because most fluorine processing is used in electronics manufacturing and hence the production is plasma is required.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saprokhin et al. in view of Hodgson et al. or JP abstract (02230720).

Saprokhin et al. discloses a fluorine generation cell system but does not teach the use of valves in the system.

Hodgson et al. discloses a fluorine generating cell, which has outlet valves and 54, is the outlet for fluorine. It would have been obvious to one of ordinary skill in the art at the time of the invention to have valves in the system, as taught by Hodgson et al. in the Saprokhin et al. system because the gas must be contained prior to entering the desired system and this necessitates the use of a valve.

JP (02230720) discloses generation of a halogen gas to be used in an accompanying system. Valves are used to separate the two systems. It would have

been obvious to one of ordinary skill in the art at the time of the invention to use a valve, as taught by JP in the Saprokhin et al. system because the gas must be contained prior to entering the desired system and this necessitates the use of a valve.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saprokhin et al. in view of Subrahmanyam et al.

Saprokhin et al. discloses a fluorine generation cell system but does not teach but does not teach production of plasma. Subrahmanyam et al. teaches converting the halogen gas(es) into a plasma in order to process a substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to convert the fluorine into a plasma, as taught by Subrahmanyam et al. in the Saprokhin et al. system because most fluorine processing is used in electronics manufacturing and hence the production of plasma is required.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wakefield et al. in view of Subrahmanyam et al.

Wakefield et al. discloses a system for producing a fluorine gas but does not teach but does not teach production of plasma. Subrahmanyam et al. teaches converting the halogen gas(es) into a plasma in order to process a substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to convert the fluorine into a plasma, as taught by Subrahmanyam et al. in the Wakefield

et al. system because most fluorine processing is used in electronics manufacturing and hence the production is plasma is required.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skone et al. in view of of Hodgson et al. or JP abstract (02230720).

Skone et al. discloses a system for producing a halogen gas, which is recycled through the system following use in processing, but does not teach the use of valves in the system.

Hodgson et al. discloses a fluorine generating cell, which has outlet valves and 54, is the outlet for fluorine. It would have been obvious to one of ordinary skill in the art at the time of the invention to have valves in the system, as taught by Hodgson et al. in the Skone et al. system because the gas must be contained prior to entering the desired system and this necessitates the use of a valve.

JP (02230720) discloses generation of a halogen gas to be used in an accompanying system. Valves are used to separate the two systems. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a valve, a taught by JP in the Skone et al. system because the gas must be contained prior to entering the desired system and this necessitates the use of a valve.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skone et al. in view of Subrahmanyam et al.

Skone et al. discloses a system for producing a halogen gas, which is recycled through the system following use in processing, but does not teach but does not teach production of plasma.

Subrahmanyam et al. teaches converting the halogen gas(es) into a plasma in order to process a substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to convert the fluorine into a plasma, as taught by Subrahmanyam et al. in the Skone et al. system because most fluorine processing is used in electronics manufacturing and hence the production is plasma is required.

Conclusion

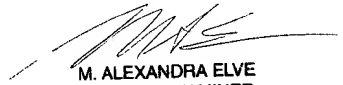
Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 6:30-3:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 13, 2004.



M. ALEXANDRA ELVE
PRIMARY EXAMINER